

WHAT IS CLAIMED IS

1. A system for design automation comprising:
 - (a) a design entry system for selecting at least one design entity from a predetermined set of design entity templates;
 - (b) a mechanism for accepting at least one respective property for at least one of said at least one design entity; and
 - (c) a hardware description language generator operative to produce hardware description language corresponding to at least one of said at least one design entity according to said at least one respective property thereof.
2. The system of claim 1, further comprising:
 - (d) a preprocessor operative to accept a said property generic to a plurality of said design entities.
3. The system of claim 1, wherein said hardware description language includes hardware description language selected from the group consisting of VHDL, Verilog HDL, System Verilog, SystemC, and RTL HDL.
4. The system of claim 1, wherein said selecting of said design entity includes selecting via a mechanism selected from the group consisting of menus, computerized forms, and graphical user interfaces.
5. The system of claim 1, wherein said selecting of said design entity includes selecting via text.

6. The system of claim 5, wherein said text is embedded in HDL text.
7. The system of claim 5, wherein said text is HDL text.
8. The system of claim 5, wherein said text includes a predetermined character sequence operative to aid in automatic recognition of said text.
9. The system of claim 5, wherein composing of said text is aided by a mechanism selected from the group consisting of menus, computerized forms, and graphical user interfaces.
10. The system of claim 5, wherein said text includes text selected from the group consisting of RxProperties statements, RxStatements, RxPhaseStatements, HitEvent statements, Trigger statements, RollingAction statements, SubRollingAction statements, StopProperty statements, PauseResumeProperty statements, and JumpProperty statements.
11. The system of claim 1, wherein said accepting of said property is via a mechanism selected from the group consisting of menus, computerized forms, and graphical user interfaces.
12. The system of claim 1, wherein said accepting of said property is via text.
13. The system of claim 12, wherein said text is embedded in HDL text.

14. The system of claim 12, wherein said text is HDL text.
15. The system of claim 12, wherein said text includes a predetermined character sequence operative to aid in automatic recognition of said text.
16. The system of claim 1, wherein said at least one design entity includes a design entity selected from the group consisting of memory controllers, waveform generators, pattern recognizers, handshake controllers, telecommunication frame generators, telecommunication frame analyzers, sequencers, signal processors, text analyzers and serial stream analyzers.
17. The system of claim 1, wherein said property includes a property selected from the group consisting of a count limit, a count direction, a time interval, a count of clock cycles, a frequency, an array dimension, a reset procedure, synchrony of a reset signal, asynchrony of a reset signal, a condition for stopping an activity, a condition for jumping to a specified clock cycle within an event, a clock cycle within an event to jump to upon occurrence of a specified event, a condition for pausing an activity, a condition for resuming an activity, a condition for transfer from an action to a subaction, behavior of a design entity upon completion of a subaction, a return target, a specification that HitEvents are to proceed serially, a specification that HitEvents are to proceed in parallel, a specification that a HitEvent is to repeat upon completion, a specification of a number of times a HitEvent is to repeat, a successive wait condition, an until condition, a range condition, a wait-on condition, a wait accumulative condition, a wait-for condition, specification that a string expression is to be interpreted as a pattern trigger, and

specification of a FalseAssignment procedure.

18. A method for design automation comprising the steps of:
 - (a) selecting a respective design entity template, for at least one desired design entity, from a predetermined set of design entity templates;
 - (b) selecting at least one respective property for at least one of said at least one design entity; and
 - (c) generating hardware description language corresponding to at least one of said at least one design entity according to said at least one respective property thereof.
19. The method of claim 18, wherein the method further comprises the step of:
 - (d) accepting a property generic to a plurality of said design entities.
20. The method of claim 18, wherein said hardware description language includes hardware description language selected from the group consisting of VHDL, Verilog HDL, System Verilog, SystemC, and RTL HDL.
21. The method of claim 18, wherein said selecting of said design entity includes selecting via a mechanism selected from the group consisting of menus, computerized forms, and graphical user interfaces.
22. The method of claim 18, wherein said selecting of said design entity includes selecting via text.

23. The method of claim 22, wherein said text is embedded in HDL text.
24. The method of claim 22, wherein said text is HDL text.
25. The method of claim 22, wherein said text includes a predetermined character sequence operative to aid in automatic recognition of said text.
26. The method of claim 22, wherein composing of said text is aided by a mechanism selected from the group consisting of menus, computerized forms, and graphical user interfaces.
27. The method of claim 22, wherein said text includes text selected from the group consisting of RxProperties statements, RxStatements, RxPhaseStatements, HitEvent statements, Trigger statements, RollingAction statements, SubRollingAction statements, StopProperty statements, PauseResumeProperty statements, and JumpProperty statements.
28. The method of claim 18, wherein said accepting of said property is via a mechanism selected from the group consisting of menus, computerized forms, and graphical user interfaces.
29. The method of claim 18, wherein said accepting of said property is via text.
30. The method of claim 29, wherein said text is embedded in HDL text.

31. The method of claim 29, wherein said text is HDL text.
32. The method of claim 29, wherein said text includes a predetermined character sequence operative to aid in automatic recognition of said text.
33. The method of claim 18, wherein said at least one design entity includes a design entity selected from the group consisting of memory controllers, waveform generators, pattern recognizers, handshake controllers, telecommunication frame generators, telecommunication frame analyzers, sequencers, signal processors, text analyzers and serial stream analyzers.
34. The method of claim 18, wherein said property includes a property selected from the group consisting of a count limit, a count direction, a time interval, a count of clock cycles, a frequency, an array dimension, a reset procedure, synchrony of a reset signal, asynchrony of a reset signal, a condition for stopping an activity, a condition for jumping to a specified clock cycle within an event, a clock cycle within an event to jump to upon occurrence of a specified event, a condition for pausing an activity, a condition for resuming an activity, a condition for transfer from an action to a subaction, behavior of a design entity upon completion of a subaction, a return target, a specification that HitEvents are to proceed serially, a specification that HitEvents are to proceed in parallel, a specification that a HitEvent is to repeat upon completion, a specification of a number of times a HitEvent is to repeat, a successive wait condition, an until condition, a range condition, a wait-on condition, a wait accumulative condition, a wait-for condition, specification that a string expression is to be interpreted as a pattern trigger, and

specification of a FalseAssignment procedure.

35. A machine readable storage medium having stored thereon machine executable instructions, the execution of said machine executable instructions implementing a method for design automation, the method comprising the steps of:

- (a) selecting a respective design entity template, for at least one desired design entity, from a predetermined set of design entity templates;
- (b) selecting at least one respective property for at least one of said at least one design entity; and
- (c) generating hardware description language corresponding to at least one of said at least one design entity according to said at least one respective property thereof.

36. The machine readable storage medium of claim 35, wherein the method further comprises the step of:

- (d) accepting a property generic to a plurality of said design entities.

37. The machine readable storage medium of claim 35, wherein said selecting of said design entity includes selecting via text.

38. The machine readable storage medium of claim 37, wherein composing of said text is aided by a mechanism selected from the group consisting of menus, computerized forms, and graphical user interfaces.

39. The machine readable storage medium of claim 37, wherein said text

includes text selected from the group consisting of RxProperties statements, RxStatements, RxPhaseStatements, HitEvent statements, Trigger statements, RollingAction statements, SubRollingAction statements, StopProperty statements, PauseResumeProperty statements, and JumpProperty statements.

40. The machine readable storage medium of claim 35, wherein said accepting of said property is via text.

41. The machine readable storage medium of claim 35, wherein said at least one design entity includes a design entity selected from the group consisting of memory controllers, waveform generators, pattern recognizers, handshake controllers, telecommunication frame generators, telecommunication frame analyzers, sequencers, signal processors, text analyzers and serial stream analyzers.

42. The machine readable storage medium of claim 35, wherein said property includes a property selected from the group consisting of a count limit, a count direction, a time interval, a count of clock cycles, a frequency, an array dimension, a reset procedure, synchrony of a reset signal, asynchrony of a reset signal, a condition for stopping an activity, a condition for jumping to a specified clock cycle within an event, a clock cycle within an event to jump to upon occurrence of a specified event, a condition for pausing an activity, a condition for resuming an activity, a condition for transfer from an action to a subaction, behavior of a design entity upon completion of a subaction, a return target, a specification that HitEvents are to proceed serially, a specification that HitEvents are to proceed in parallel, a specification that a HitEvent is to repeat upon completion, a specification of a

number of times a HitEvent is to repeat, a successive wait condition, an until condition, a range condition, a wait-on condition, a wait accumulative condition, a wait-for condition, specification that a string expression is to be interpreted as a pattern trigger, and specification of a FalseAssignment procedure.